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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/341,232	10/25/1999	VOLKER ERNST	2345/79	4900

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EXAMINER

FERRIS III, FRED O

ART UNIT	PAPER NUMBER
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2123

DATE MAILED: 04/24/2003

11

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/341,232

Applicant(s)

ERNST ET AL.

Examiner

Fred Ferris

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 July 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 28 February 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 21-44 have been presented for examination based on applicant's arguments filed on 28 February 2003 (paper #10). Claims 21-44 remain rejected by the examiner.

Response to Arguments

2. Applicant's arguments filed on 28 February 2003 have been fully considered.

Regarding applicant's response to objections to the drawings: Applicants have submitted proposed drawing changes that are approved by the examiner pending review by the draftsman.

Regarding applicant's response to 35 U.S.C. 112(1) rejection: Applicants have argued that the limitations of independent claims 21 and 44 relating to "determining the needs and requirements for each of the users" is enabled by the specification on page 5, lines 8-29, and page 17, line 31 – page 18, line 3. Examiner asserts that these passages merely recite that **loads are determined** "according to user needs and requirements" and that "requirements represent an abstract number in the method" but do not specifically teach how or skilled in the art would actually determine the needs and requirements of the users and does not disclose specifically what these needs and requirements are.

Applicants have further argued that the limitations of independent claims 21 and 44 relating to "determining at least one load of the edges of the tree structure as a function of the needs and requirements for each of the users to provide a drafted plan"

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is enabled by the specification on page 11, lines 16-20, page 12, lines 1-24, page 13, lines 17-23, page 15, line 19, page 16, line 28, page 17, lines 2-12 & 21, and page 18 line 3. Examiner asserts that these passages merely recite confusing and non-specific text that reads like a "wish list" of features but does not specifically enable the claimed subject matter. For example, page 11, line 16 recites:

"The possible algorithm is designed so that load "0" is initially assigned to all edges of tree structure Ba, moving consecutively from each user to exchange along edges and nodes, adding requirement of the user, where the procedure was last started, to each edge traveled"

Even by referring to figure 4a-c this passage makes no sense, does not provide enablement for "determining requirements of the user" or "generating a drafted plan", and since no flow chart is provided, the examiner is at odds to determine if applicants are attempting to describe the actual method of the claimed invention, or simply a "possible" way to solve the problem. Further, the subsequent passages on line 22 which recite, "After the optimized tree structure or route graph has been drawn up using the process steps described above" and "by using the equipment as efficiently as possible" do not provide enablement since the process described "above" does not actually teach how a tree structure would be optimized or how "route graph" is drawn up. Clearly one skilled in the art would not be able to realize a computer program capable of "determining user requirements via tree structure", or actually "generating a final network design" from this description without undue experimentation. Remaining passages do not solve this problem or provide further enablement for the claimed subject matter. Accordingly, the examiner maintains the 35 U.S.C. 112(1) rejection.

Regarding applicant's response to 35 U.S.C. 102(b) rejection: Applicants have argued that the prior art does not teach limitations relating to **generating a graph** which is composed of edges and nodes, the edges representing all **transmission paths** in the network, wherein a **length and a direction** of each of the edges is determined as a function of **real topography** of street segments and **definable cable paths** of the particular territory associated with the network, the **nodes representing intersections** between at least one of the street segments and the definable cable paths, and **assigning the users to the graph**, each of the users being connected to at least one edge of the edges and a closest node of the node via at least one service edge.

The examiner asserts that, as cited in the previous office action, Jereb discloses generating a network graph composed of edges and nodes (page 1263, Section IV, Fig. 2), edges representing all **transmission paths** in the network ("edges" simply define boundaries for cable distribution areas) (page 1264, para: 2-6, Figs. 2, 3), **length and direction** of edges as a function of **real topography, definable cable paths, and node intersections** (page 1263-1265, Fig. 2 shows length and direction, Fig. 3 includes roads (streets, i.e. topography), and network paths), and **users connected to edges** (page 1263, Section IV, Fig. 2). Accordingly, examiner maintains the 35 U.S.C. 102(b) rejection.

Regarding applicant's response to 35 U.S.C. 103(a) rejection: In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on

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combinations of references. See In re Keller, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); In re Merck & Co., 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

*Applicants are attempting to argue that neither reference teaches all of the references of independent claims (see page 7, last paragraph – Bensaw reference..., and page 8, paragraph 2 – Kar reference..., paper #10). As cited in the previous office action Bensaw teaches limitations relating to **generation** of a **network graph** in a tree structure consisting of **nodes** and **edges** representing the **network topography** and **assigning users** to the graph. (Figs. 1-5, 24, Abstract, Summary of Invention, CL2-L16-65, CL3-L6-39, CL7-L56-CL8-L40, CL14-L27) Kar teaches a network graph algorithm consisting of node entries in a tree structure including **user requirements**, equipment, distribution/transmission, loads, geographical, etc. (Introduction, P30-CL1, L1-12, P30-CL2-L12-37, P31-CL1-2, P32-CL1-2, Figs. 1-5) Examiner maintains the 35 U.S.C. 103(a) rejection.*

Regarding prior art rejections: The examiner further notes that while the specification for the claimed invention is delinquent in the areas cited under 35 U.S.C. 112(1) rejections, the examiner has made prior art rejections based on the limited scope of information contained in the specification.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. *Independent claims 21-44 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for generating a network graph and tree structure, does not reasonably provide enablement for actually determining user needs, determining user requirements via tree structure, or actually generating a final network design. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to **make and/or use** the invention commensurate in scope with these claims. The specification gives no adequate description of how a user requirement is determined, what the user requirements actually are, or exactly how these user requirements are determined (i.e. affected) via the tree structure. Further, there is no adequate description given of precisely how the final network design is generated once the cable distribution areas are formed (combined) from the tree structure. (specification, page 17, line 5-10) Independent claims 22-43 inherit these defects.*

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. *Claims 21-44 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by "Planet: A Tool for Telecommunications Network Planning" L. Jereb et al, IEEE 073308716/94, IEEE Journal on Selected Areas in Communications, 1994*

*Regarding independent claim 21: Jereb discloses a system and method for designing and **generating a computer network including network topography, circuit routes (paths), equipment assignments (requirements), grouping solutions (sub areas), and circuit demands (load).** (Abstract, P1262-para1, Section III A, B, C, D, Fig. 1) Jereb further discloses generating a **network graph** via a **tree structure** where **edges represent transmission paths, nodes represent intersections, and users are assigned to a network graph that is optimized (removing edges)** to provide a **network plan** that considers **cost and equipment (requirements)** parameters. (P1263-1264, Section IV A, B, Fig. 2, 3) Jereb also discloses a graph that determines the effect of **user requirements and routing via the tree structure** to produce a **final network drafted plan (graphical result).** (Fig. 3, 4, 5, P1264, Section IV C, P1265, Section V, A, B, P1267, Section VI, A, B, C)*

*Regarding dependent claims 22-27: Jereb further teaches generating a **network graph** via a **tree structure** where **edges** are manipulated (**removed, split, etc.**) based on user requirements (equipment) and determining the most **economical transmission path** using **real topography**. (Fig. 3, 4, 5, P1264, Section IV C, P1265, Section V, A, B, P1267, Section VI, A, B, C) Jereb also teaches defining and **storing requirements** (equipment, territory, sub areas, and routes) in multiple user **databases**. (P1262-para1, Section III A, B, C, D, Fig. 1, P1263-1264, Section IV A, B, Fig. 2, 3)*

*Regarding dependent claims 27-35: This group of claims is simply drawn to the assignment and manipulation (**delimiting**) of **edges** and **nodes** based on user requirements, territory, distribution/transmission, equipment, sub areas, and loads within the **network graph tree structure** and is clearly anticipated by Jereb as previously cited above. (P1263-1264, Section IV A, B, Fig. 2, 3, 4, 5, P1264, Section IV C, P1265, Section V, A, B, P1267, Section VI, A, B, C)*

*Regarding claims 36-43: Jereb discloses **cable distribution areas** and determining **distribution center** (Fig. 2, 3 P1265, Section V, A) and user load (**circuit demands**) and further considers (assigns) conductor types (transmission line) within the network including copper and optical cables. (Fig. 2, Section IV, A,B,C, Section V, A,B)*

*Regarding independent claim 44: Claim 44 merely claims the **computer instructions and storage media** for the features outlined in claim 21 and is rejected using the same reasoning as previously cited above.*

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. *Claims 21 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,276,789 issued to Besaw et al in view of "Heuristic Layout Algorithms for Network Management Presentation Services", G. Kar, IEEE Network, 0890-8044/88/0011-0029, November 1988.*

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Independent claim 21 is drawn to:

method for generating network connecting users to distribution node & steps of:

generating network plan with substeps:

generating network graph

edges = transmission paths: edge length/direction from topography & cable paths

nodes = intersections, street segments / cable paths

assigning users to graph

users connected to edge/node via service edge
generating tree structure (removing edges) one connection main node and each users
connection composed of service edge (nodes of tree structure)
determining needs and requirements for each of the users, and
determining user requirements via tree structure for drafted plan
generating network according to drafted plan

*Regarding independent claim 21: Bensaw teaches a system for automatically laying out (**generating**) a **computer network system** where the layout system retrieves a list of the **nodes** within the network and their interconnections from a **database** which can be built by the **user** or **automatically constructed** by other **software**. The Bensaw system teaches the **generation** of a **network graph** in a tree structure consisting of **nodes** and **edges** representing the **network topography** and **assigning users** to the graph. Bensaw further teaches parsing (processing **edges**) the tree to **optimize** the network, and the **generation and display** of a final network layout (**drafted plan**). (Figs. 1-5, 24, Abstract, Summary of Invention, CL2-L16-65, CL3-L6-39, CL7-L56-CL8-L40, CL14-L27)*

*Bensaw references, but does not explicitly teach the incorporation of **user requirements** (network/equipment information) or geographical (topography) data relating to the network within the tree structure.*

*Kar teaches a network graph representation where node entries within the tree structure include **information fields** that can represent information relative to the network such as **user requirements**, equipment, distribution/transmission, loads, etc. Kar further discloses geographical area and sub area relationships. (Introduction, P30-CL1, L1-12, P30-CL2-L12-37, P31-CL1-2, P32-CL1-2, Figs. 1-5)*

*It would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to modify the teachings of Bensaw relating to automatically laying out (**generating**) a **computer network system diagram (drafted plan)** via a **network graph** in a tree structure consisting of **nodes** and **edges** representing the **network topography**, with the teachings of Kar where node entries within the tree structure include **information fields** that can represent information relative to the network such as **user requirements**, equipment, distribution/transmission, and loads
To realize a "method for generating a network"*

An obvious motivation exists since, as referenced by prior art, network graphs are commonly used to model the topographical structure and routing of networks to evaluate network performance and improve cost/performance metrics.

*Regarding independent claim 44: Claim 44 merely claims the **computer instructions and storage media** for the features outlined in claim 21 and is rejected using the same reasoning as previously cited above.*

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure, careful consideration should be given prior to applicant's response to this Office Action.

U.S. Patent 6,377,543 issued to Grover et al teaches network path modeling.

U.S. Patent 6,144,942 issued to Weinburg teaches network modeling via graph.

"A Quantitative Comparison of Graph-Based Models for Internet Topography" E.

Zegura, IEEE/ACM Transactions on Networking, 1063-6692/97, 1997, teaches network modeling via graph.

"Distributed Algorithms for Finding Center and Mediums in Network", E. Korach, ACM Transactions 0164-0925/84/0700-0380, Vol. 6, No. 3, July 1984, teaches network modeling via graph.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred Ferris whose telephone number is 703-305-9670 and whose normal working hours are 8:30am to 5:00pm Monday to Friday.

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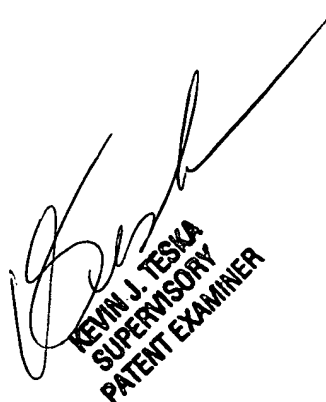
Any inquiry of a general nature relating to the status of this application should be directed to the group receptionist whose telephone number is 703-305-3900.

The Official Fax Numbers are:

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April 14, 2003


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